REMARKS

This is in response to the Office Action mailed February 24, 2003. Claims 1-15 and 21-26 are pending in the application. Claims 1-15 and 21-22 are rejected and claims 23-26 are allowed. Applicants hereby respond to the issues raised in the Office Action as follows.

Response to objection to the specification

The title of the invention was objected to on the basis that it is not descriptive of the subject matter to which the claims are directed. Applicants have amended the title to correspond to the subject matter to which the claims are directed.

Response to claim rejections - 35 U.S.C. § 112

Claims 1-15 and 21-22 were rejected under 35 U.S.C. § 112, Second Paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Applicants have amended claims 1-15 and 21-22 to clarify the subject matter of the invention and to correct informalities noted in the Office Action and other informalities. In particular, claim 1 has been amended to delete "for assembling components" in line 1 and "unassembled data device" recited in line 11. Claim 2 has been amended to delete reference to the apparatus. Claim 5 has been amended to recite "containers". Claim 21 has been amended to recite an assembly apparatus in lines 4 and 6. Recitation of an indexer in claim 4 is believed proper under 35 U.S.C. § 112 and is fully supported by Applicants' specification. (See Applicants' specification page 10, line 27-page 11, line 8; page 15, lines 17-28 and page 16, lines 8-15). Claim 10 is believed proper under 35 U.S.C. § 112 based upon amended claim 1. Claim 21 has also been amended to provide antecedent basis for unassembled device and the assembly arms.

Response to claim rejections - 35 U.S.C. § 102

Claims 1-3 and 21 were rejected under 35 U.S.C. § 102(e) as being anticipated by Chuang et al., U.S. Patent No. 6,094,804. Claims 1-3 recite *inter alia* an assembly apparatus including a carousel base rotationally coupled to the frame and a carousel coupling device to removably couple a component carousel to the carousel base which is not taught nor suggested by Chuang.

Claims 1-3 were rejected *inter alia* on the basis that Chuang et al. disclose an apparatus comprising a frame 278 connectively attached to the carousel 316 with base and a carousel coupling device to removably couple to the carousel base. The Office Action recites that Chuang discloses a carousel coupling device to removably couple to the carousel base without reference to corresponding structure in Chuang. The Office Action also recites that "Chuang et al disclose an apparatus comprising a frame 278 connectively attached to the carousel 316 with base. In contrast, claims 1-3 relate to a carousel base which is coupled to a frame and a carousel coupling device to removably couple a carousel to the carousel base which is not anticipated by a device including a frame connectively attached to the carousel with base. Based upon the foregoing, the Office Action fails to establish a *prima facie* basis for rejecting claims 1-3.

Claim 21 is a means-plus-function claim which is interpreted to include the corresponding structure disclosed in Applicants' specification and equivalents. As properly interpreted based on the subject matter disclosed in Applicants' specification, claim 21 is not taught nor suggested by the subject matter of Chuang as discussed above. Based upon the foregoing, Applicants respectfully request reconsideration and allowance of claims 1-3 and 21.

The Director is authorized to charge any fee deficiency required by this paper or credit any overpayment to Deposit Account No. 23-1123.

Respectfully submitted,

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MARKED-UP VERSION OF REPLACEMENT CLAIMS

1.(Thrice Amended) An assembly apparatus ~~for assembling components of a data storage device~~ comprising:

a frame;

a carousel base rotationally coupled to the frame;

a carousel coupling device to removably couple a component carousel including a plurality of assembly components to the carousel base;

an assembly arm movably coupled to the frame; and

a driver coupled to the assembly arm to move the assembly arm between ~~the carousel base and an unassembled data storage device~~ first and second positions to sequentially unload ~~individual~~the plurality of assembly components from the component carousel and assemble the unloaded assembly components ~~into the data storage device~~.

2.(Thrice Amended) The assembly apparatus of claim 1 wherein the component carousel supports a plurality of stacks of the plurality of assembly components at spaced locations arranged about a center point and ~~the apparatus~~ further comprise~~s~~ing:

a motor coupled to the carousel base to rotationally position ~~each~~ the plurality of stacks of assembly components for assembly.

3.(Thrice Amended) The assembly apparatus of claim ~~2~~1 wherein the carousel coupling device comprises a vacuum source operably coupled to the rotatable carousel base to supply vacuum pressure in an engaged mode to secure the component carousel to the carousel base and to release the vacuum pressure to remove the component carousel.

4.(Thrice Amended) The assembly apparatus of claim 2 further comprising an indexer coupled to the carousel base to align individual components from the plurality of stacks of the plurality of assembly components relative to the assembly arm.

5.(Thrice Amended) The assembly apparatus of claim ~~2~~1 and further comprising the component carousel including a ~~carousel coupled to the carousel base and a~~ plurality of elongated component~~s~~ container~~s~~ configured to contain ~~a~~ the plurality of assembly components ~~and the carousel includes a plurality of latch assemblies to~~ removably ~~secure~~coupleable to the ~~plurality of containers~~ component carousel and positionable at spaced locations about a rotation axis of the carousel base.

6.(Thrice Amended) The assembly apparatus of claim 1 wherein the apparatus includes a plurality of carousel bases rotationally coupled to the frame and a plurality of carousel coupling devices to removably support multiple component carousels relative to the plurality of carousel bases and the driver moves the assembly arm between ~~the multiple component carousels on~~ the plurality of carousel bases to unload the multiple component carousels on the plurality of carousel bases.

7.(Thrice Amended) The assembly apparatus of claim 1 and further comprising the component carousel ~~comprising a~~and the component carousel containing discs ~~carousel removably coupled to the carousel base adapted to support discs~~ for assembly in a spindle motor of a data storage device.

8. (Amended) The assembly apparatus of claim 7 wherein the ~~disc~~component carousel containing discs includ~~ing~~es a plurality of spaced latch assemblies about a circumference of the ~~disc~~component

carousel containing discs to removably connect a plurality of disc containers storing a plurality of stacked discs to the ~~disc~~component carousel at concentric spaced locations.

9.(Amended)The assembly apparatus of claim 8 wherein the plurality of disc containers include covers and the apparatus includes a cover detatcher to detach the disc container covers prior to assembling discs from the plurality of disc containers.

10.(Thrice Amended) The assembly apparatus of claim 1 and ~~further~~comprising the component carousel ~~comprising a spacer carousel adapted to support~~and the component carousel containing spacers for assembly in a spindle motor of a data storage device.

11.(Thrice Amended) The assembly apparatus of claim 1 wherein the apparatus is adapted to assembly components of a disc stack ~~supported by~~of a spindle motor and further comprising:

a plurality of carousel bases including a carousel base adapted to support a component carousel for discs and a carousel base adapted to support a component carousel for spacers;

a plurality of assembly arms including an assembly arm coupled to the carousel base ~~supporting~~adapted to support the component carousel for discs to assemble ~~the~~ discs and an assembly arm coupled to the carousel base ~~supporting~~adapted to support the component carousel for spacers to assemble ~~the~~ spacers;

a plurality of drivers coupled to the plurality of assembly arms to move the plurality of assembly arms between the plurality of carousel bases and a loading station; and

a controller coupled to the plurality of drivers ~~of the assembly arm~~ to coordinate operation of the plurality of assembly arms to alternately assemble the discs and the spacers.

12.(Thrice Amended) The assembly apparatus of claim 11 ~~wherein~~and comprising the component carousel for ~~the~~ discs ~~includes a frame~~and the component carousel for discs including a plurality of circumferentially spaced latch assemblies to removably couple a plurality of disc containers to the component carousel for discs.

13.(Thrice Amended) The assembly apparatus of claim 12 wherein the disc containers house a ~~disc~~ stack ~~including a plurality~~ of coaxially aligned unassembled discs and the assembly apparatus further comprises an indexer to incrementally position the carousel base ~~removably supporting~~ adapted to support the component carousel for discs to sequentially unload individual discs in the ~~disc~~ stack of unassembled discs.

14.(Thrice Amended) The assembly apparatus of claim 11 ~~wherein the~~and comprising a component carousel for spacers ~~includes a base~~ including a plurality of spacer posts arranged about a center point and sized to support a plurality of stacked spacers and including a motor coupled to the carousel base to move the component carousel for spacers to align ~~sequential stacks of~~ the plurality of stacked spacers for assembly.

15.(Thrice Amended) The assembly apparatus of claim 14 further comprising an index rod operably coupled to the component carousel for spacers to push the spacers towards an extended end of the spacer posts for assembly.

21.(Twice Amended) An assembly apparatus comprising:

an assembly arm and assembly arm driver operably coupled to the assembly arm to operate the assembly arm to unload components from the assembly apparatus and load components in ~~the~~an unassembled device; and

means for intermittently stocking the assembly apparatus with a supply of the components for assembly by the assembly arm~~s~~.

22.(Amended) The assembly apparatus of claim 6 wherein the apparatus includes a detector to detect when the multiple component carousels are empty and the assembly arm is coupled to a controller which is configured to shift operation of the assembly arm from one of the multiple component carousels to another of the multiple component carousels supported on the plurality of carousel bases based upon feedback from the detector.

23.(Amended) An assembly apparatus comprising:

a frame;

a plurality of carousel bases rotationally coupled to the frame and rotatable about spaced rotation axes;

an assembly arm movably coupled to the frame;

an assembly arm driver coupled to the assembly arm to operate the assembly arm to unload components from carousels coupled to the plurality carousel bases; and

a controller operably coupled to the assembly arm and configured to sequentially operate the assembly arm between the plurality of carousel bases.

24.(Amended) The assembly apparatus of claim 23 wherein the plurality of carousel bases support disc carousels and further comprising a plurality of disc unloaders coupled to the plurality of carousel bases and ~~the assembly arm is operable between~~ the

plurality of carousel bases ~~are coupled to~~including an elevator coupled to the plurality of carousel bases to position sequential staked discs on the disc carousels relative to the plurality of disc unloaders.

25.(Amended) The assembly apparatus of claim ~~24 wherein~~ 23 including a plurality of disc carousels removably coupled to the plurality of carousel bases and the plurality of disc carousels removably supporting a plurality of disc containers including a plurality of stacked discs.

26. (Amended) The assembly apparatus of claim 25 wherein the plurality of disc containers are removably supported by a plurality of latch assemblies.